

BALLOON ALIGNMENT AND COLLAPSING SYSTEM

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] The present application is a continuation-in-part of U.S. Patent Application 10/244,271, filed September 16, 2002, the disclosure of which is incorporated by reference herein.

~~USPN~~ now  
6,808,524  
PV  
9-30-05

BACKGROUND OF THE INVENTION

[0002] The present invention relates to apparatus incorporating balloons and to techniques employing balloons.

[0003] Certain medical and veterinary procedures employ balloons mounted on catheters for various purposes. For example, as described in co-pending, commonly-assigned U.S. Patent Application Serial No. 09/905,227, published as US-2002/0065512-A1, the disclosures of which are hereby incorporated by reference herein, a structure including a balloon is used as a reflector for directing ultrasonic energy from an ultrasonic transducer mounted within the balloon onto a region of tissue to be ablated. As further described in the aforementioned application, the balloon structure also focuses the ultrasonic energy. Such a device can be used, for example, to ablate cardiac tissue in treatment of cardiac arrhythmias. Other balloon structures are used for other medical and veterinary procedures.

[0004] Typically, the balloon is placed within the body of the subject by threading a carrier catheter having the balloon attached thereto into the body of the subject through the vascular system or other passages within the body and into the desired treatment location with the balloon a deflated condition. Once the balloon is at the desired location within the subject's body, the balloon is inflated, the desired procedure is performed and the balloon is again deflated and withdrawn by withdrawing the carrier catheter. In many procedures, it is desirable to maintain alignment between portions of the balloon, and to maintain alignment between features of the balloon and the carrier catheter while the